

REMARKS

Claims 1-20 are currently pending in the present application. Reexamination and reconsideration of the application are respectfully requested.

REQUEST FOR RECONSIDERATION REGARDING FINALITY OF THE ACTION

A request for reconsideration regarding the finality of the action is respectfully submitted. The finality of the Action is respectfully contested. First, it is noted that the claims have not been substantively amended in this case. Claims 3 and 14 were amended to correct an informality regarding a proper claim from which to depend. Second, this Final Action is the first time a specific portion of Kamo is cited that is relied upon for the obviousness rejection of independent claims 1 and 12. As advanced herein below, it is unclear to the Applicant the specific basis and/or portions of the cited references relied upon for the rejection of the dependent claims 2-11 and 13-20. Third, a newly discovered reference (see paragraph 6) has been cited. Consequently, applicant in this case has not been provided a chance to change the focus of the claims to avoid the newly applied prior art. Accordingly, the finality of this action would produce an unfair result.

RESPONSE TO ARGUMENTS

Paragraph 3 of the Final Action responds to the claim of improper combination of Kitagawa and Kamo references based on hindsight reasoning. This claim of improper combination of Kitagawa and Kamo references based on hindsight reasoning

is maintained. Furthermore, as advanced herein below, even if Kitagawa and Kamo are properly combined, which is not conceded (see Amendment and Response dated 1/15/04 for reasons, which are not repeated herein), the resulting combination fails to fairly teach or suggest the lens as claimed.

Paragraph 4 indicates that arguments previously presented do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty of the claims in view of the disclosed references.

Applicant respectfully disagrees with this position. The 10/15/03 Action cited FIG. 3 of Kitagawa as teaching the claimed invention, except for the first surface for performing color correction function and the first surface including a diffraction efficiency improvement mechanism. Kamo is cited as teaching the deficiency of Kitagawa. However, it is noted that a specific portion of Kamo relied upon by the Action was not presented in the First Action and is only now presented in the current Final Action. Also, the 10/15/03 Action did not comment on the other pending dependent claims (i.e., 2-4, 6-11, 13-15, and 17-20) except for claims 5 and 16 for which Table 1 of Kitagawa was cited.

In response to the First Action, an Amendment and Response dated 1/15/04 (hereinafter A&R) was filed. This A&R clearly sets forth specific claim language that is believed to be patentable in view of the cited references (see pages 12-14). Specifically, the A&R highlights language recited by claims 3 and 14 that did not appear to be taught by the cited references (see page 12, third full paragraph). Furthermore, the A&R highlights language recited by claims 4 and 15 that did not

appear to be taught by the cited references (see page 12, fourth full paragraph). Moreover, the A&R highlights language recited by claims 6 and 17 that did not appear to be taught by the cited references (see, page 12, fifth full paragraph).

Furthermore, the A&R highlights language recited by claims 7 and 18 that did not appear to be taught by the cited references (see page 13, first full paragraph). Finally, the A&R highlights language recited by claims 8 and 19 that did not appear to be taught by the cited references (see page 13, second full paragraph).

The A&R also requests that the specific portions of either Kitagawa or Kamo relied upon by the Action for rejecting the above-noted claims be identified (see page 13, third full paragraph). The Final Action now cites a specific portion of Kamo relied upon for teaching color correction. This cited portion is addressed hereinafter. However, the specific limitations set forth by the other dependent claims are still not addressed in this Final Action. Instead, a blanket statement, "the results as claimed in claims 2-11, 14-20 are inherently included in the modified lens of Kitagawa in view of Kamo," is provided.

From this blanket statement, it is unclear specifically how the references teach or suggest the claimed features. It would be helpful to Applicant and consistent with proper examination practice if the Examiner would kindly indicate the specific structures or portions within the applied references that teach the specific claimed features in the Advisory Action instead of reciting an un-supported blanket statement as an alleged disclosure of the applied references. This comment is not intended to be criticism, but merely a plea for greater specificity so that the applicant may clearly

understand what disclosures are being relied upon in the appropriate references to reject dependent claims 1-11, and 13-20.

Paragraph 5 is directed to specific aspects of the obviousness rejection based on Kitagawa and Kamo. These aspects are addressed herein below.

REJECTION OF CLAIMS 1-20 UNDER 35 U.S.C. 103(a)

Claims 1-20 are rejected under 35 U.S.C. 103 for the reasons set forth on pages 2-4 of the Action. Specifically, claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitagawa (US Pat. No. 6,507,443) in view of Kamo (US Pat. No. 6,154,323).

The Action states that Kitagawa discloses in FIG. 3 the claimed invention, but does not disclose "first surface for performing color correction function, the first surface including a diffraction efficiency improvement mechanism," as claimed.

The Kamo reference is cited for teaching a surface including a diffraction efficiency improvement mechanism for performing the function of color correction. The Final Action cites col. 4, lines 19-25 of Kamo for teaching the diffraction efficiency improvement mechanism, as claimed. The Action further states that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the Kitagawa's lens in light of Kamo's teaching for the same purpose of color correction as disclosed by Kamo.

The rejections under 35 U.S.C. 103 are respectfully traversed, at least insofar as applied to the amended claims, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth hereinbelow.

Regarding claim 1, the Kitagawa reference, whether alone or in combination with the Kamo reference fails to teach or suggest "a first surface for primarily performing a color correction function, the first surface including a diffraction efficiency improvement mechanism," as claimed.

Regarding claim 12, Kitagawa reference, whether alone or in combination with the Kamo reference fails to teach or suggest "a first optical means for primarily performing a color correction function, the first optical means including a diffraction efficiency improvement means," as claimed.

It is respectfully submitted that although col. 4, lines 19-25 of Kamo may suggest the use of a diffractive optical element to perform color correction, col. 4, lines 19-25 does not fairly teach or suggest the diffraction efficiency improvement mechanism.

First, it is noted that color correction is not the same as improving diffraction efficiency. The Background of the application states the following: "When designing a lens system under a strict height requirement, it is generally not possible to use more than a single lens. In a single lens design, there is a need to use a diffractive surface for performing color correction functions." (see, Application, page 3, lines 1-3).

It is noted that the application teaches that when designing for a strict height requirement (e.g., a cell phone camera, (see, Application, page 2, lines 20-25) a diffractive surface may be employed for performing color correction functions.

The Background of the application further states: "One challenge of using a diffractive surface is to design the surface in such a way as to increase the diffraction efficiency. The diffraction efficiency is related to how well the lens places light on the focal plane at desired locations. For example, a very efficient lens converges the incident light rays at discrete points (known as spots) along the focal plane. As the diffraction efficiency of the lens decreases, the size of the spots increases. As the spot size increase, the resulting image loses clarity and become fuzzier. Unfortunately, the prior art single lens designs exhibit low diffraction efficiency, thereby leading to a fussy image." (see, Application, page 3, lines 3-11)

Kamo does not teach the diffraction efficiency improvement mechanism feature because Kamo is directed to a very different application with different requirements. For example, the length of Kamo's system is 100mm (see, col. 5, line 24-25), which is about 10 times larger than the thickness of a cellular telephone (e.g., 1.5 to 2 cm (or 15-20mm) thickness).

EVEN IF PROPERLY COMBINED, THE KITAGAWA REFERENCE AND THE
KAMO REFERENCE FAIL TO TEACH OR SUGGEST THE SPECIFIC
LIMITATIONS SET FORTH BY THE INDEPENDENT AND DEPENDENT
CLAIMS

It is respectfully submitted that even if the Kitagawa and Kamo references were properly combined, which is not conceded, the Kitagawa and Kamo references fail to teach or suggest specific limitation recited by the claims.

It is noted that the dependent claims 2-11 and 13-20 incorporate all the limitations of independent claims 1 and 12, respectively. Furthermore, the dependent claims also add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited references.

The specification clarifies and defines diffraction efficiency, the importance of spot size, and relationship between diffraction efficiency and the clarity or fussiness of an image. (see, Application, page 9, lines 13 to page 12, line 3) The features related to diffraction efficiency are claimed in independent claims 1 and 12. The dependent claims 2, 3 and 13, 14 which depend directly or indirectly from independent claims 1 and 12 incorporate all the limitations of claims 1 and 12 and further include additional limitations related to the diffraction efficiency feature, which are not shown or suggested by the cited prior art.

The features related to spot size and field of view are claimed in dependent claims 4 and 15, which depend directly from independent claims 1 and 12, incorporate all the limitations of claims 1 and 12, and further include additional limitations related to the spot size and field of view, which are not shown or suggested by the cited prior

art. For example, Kitagawa describes an angle of view of 56 degrees and a diagonal field of view of 70 degrees (col. 5, line14-16), and Kamo appears to specify an angle of view of about 28 degrees (see Examples 1-9, omega is one-half angle of view). Also, neither of the cited references appears to teach or suggest a spot size.

The features related to vignetting reducing mechanism are claimed in dependent claims 6-8 and 17-19, which depend directly from independent claims 1 and 12, incorporate all the limitations of claims 1 and 12, and further include additional limitations related to the vignetting reducing mechanism feature, which are not shown or suggested by the cited prior art. For example, neither of the references teaches or suggests any mechanism to reduce shadows in the corners of the image as claimed in claims 6 and 17. Furthermore, neither of the references teaches or suggests positioning the aperture and the first surface to make the lens telecentric as claimed in claims 7 and 18. Moreover, neither of the references teaches or suggests positioning the aperture and the first surface to cause a chief ray to be generally perpendicular to the focal plane as claimed in claims 8 and 19.

After a review of the cited references, there does not appear to be any teaching of the specific claims limitations recited by the above-noted dependent claims. In this regard, it is respectfully requested that the next Action specifically point out those portions of the cited reference that teach or suggest the specific recited elements in the claimed invention.

In view of the foregoing, it is respectfully submitted that the Kitagawa reference, whether alone or in combination with the Kamo reference, fails to teach or suggest the single lens as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

New Grounds for Rejection

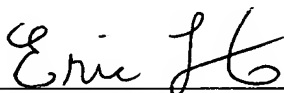
Kitagawa et al. (JP 11-183794) is cited in paragraph 6 on page 4 as teaching the invention as claimed. It is respectfully requested that a copy of the Japanese abstract or patent be provided with the Advisory Action. However, assuming that the primary drawing and the numbers for the elements in that drawing are the same for the Japanese patent and the U.S. equivalent, the following remarks are respectfully submitted. First, element 2 is an aperture iris and does not fairly teach the first surface as claimed. Second, element 4 is a lens-barrel and does not fairly teach the diffusion efficiency improvement mechanism as claimed. Third, element 3 is a field iris and does not fairly teach the second surface as claimed.

Appl. No.: 10/087,278
Amdt. dated Aug. 3, 2004
Reply to Final Office Action of June 3, 2003

Conclusion

For all the reasons advanced above, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the pending claims are requested, and allowance is earnestly solicited at an early date. The Examiner is invited to telephone the undersigned if the Examiner has any suggestions, thoughts or comments, which might expedite the prosecution of this case.


Respectfully submitted,



Eric Ho, Reg. No. 39,711
Attorney for Applicant
20601 Bergamo Way Tel: (818) 998-7220
Northridge, CA 91326 Fax: (818) 998-7242

Dated: August 3, 2004

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MAIL STOP: AF, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450 on the date below.



Eric Ho (RN 39,711)

August 3, 2004
(Date)